EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In this topic, students apply their knowledge of solving equations to real-world situations. Using knowledge of angle relationships (e.g., a right angle has a measure of 90 degrees, and a straight angle has a measure of 180 degrees), students write and solve one-step equations to find the unknown measure of an angle. Given a real-world situation, students write an equation with two variables (e.g., $t = 7m$), analyze the relationship between the **independent** and **dependent variables**, create a table, and plot the points on the coordinate plane. To wrap up the module, students use their understanding of true and false number sentences to write and **graph inequalities** on a number line diagram.

You can expect to see homework that asks your child to do the following:

- Write an equation to solve for the unknown measure of an angle.

- Identify the independent and dependent variables in a context, write an equation, complete a table, and plot the points from the table on a graph.

- From a set of numbers, choose the number(s), if any, that make a given equation or inequality true.

- Given a phrase (e.g., at least 13), write and graph an inequality (e.g., $x \geq 13$,).

SAMPLE PROBLEMS *(From Lessons 30 and 32)*

1. Write an equation that represents the following situation and solve.

$\angle ABC$ measures 90°. It has been split into two angles, $\angle ABD$ and $\angle DBC$. The measures of the two angles are in a ratio of 2:1. What is the measure of each angle?
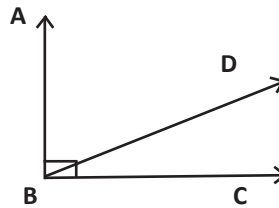

Let $x°$ represent the measure of $\angle DBC$.

$$x° + 2x° = 90°$$
$$3x° = 90°$$
$$3x° \div 3 = 90° \div 3$$
$$x° = 30°$$

The smaller angle ($\angle DBC$) measures 30°. Since the ratio of angle measures is 2:1, the measure of the larger angle ($\angle ABD$) has a value of 60° because 30 × 2 = 60.

2. Each week, Quentin saves $30. Write an equation that represents the relationship between the number of weeks that Quentin has saved his money, w, and the total amount of money in dollars he has saved, s. Then, name the independent and dependent variables. Create a table and a graph that show the total amount of money Quentin has saved from week 1 through week 8. Finally, write a sentence that explains this relationship.

$s = 30w$

The amount of money saved in dollars, s, is the dependent variable, and the number of weeks, w, is the independent variable.

SAMPLE PROBLEM *(continued)*

Number of Weeks	Total Saved ($)
1	30
2	60
3	90
4	120
5	150
6	180
7	210
8	240

Money Saved

Amount of Money ($) / *Number of Weeks*
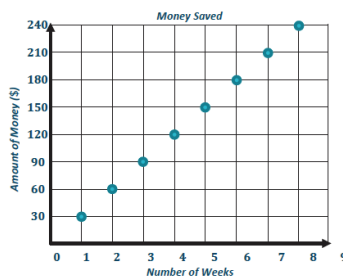
Therefore, the amount of money Quentin has saved increases by $30 for every week he saves money.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

You can help at home in many ways. Here are some tips to help you get started.

▪ Encourage your child to identify which number(s) make each inequality true. Given the set of numbers {3, 4, 9, 12, 24}, choose the number(s) that make each inequality true.

    a. $m + 7 < 12$ (solution: {3, 4})

    b. $t - 2 \leq 9$ (solution: {3, 4, 9})

    c. $\dfrac{k}{3} \geq 2.25$ (solution: {9, 12, 24})

▪ With your child, write three equations that have a solution of $x = 12$.

(Possible equations: $24 = 2x$, $8 = x - 4$, and $18 = x + 6$.) Then, each of you create an equation for which the solution is a positive whole number between 50 and 100. Exchange equations with your child. Solve each other's equations, and explain why the solution is correct.

TERMS

Dependent variable: A variable whose value depends on the value of another variable. For example, if x represents the number of hours spent studying and y represents the test score, the value of y might change according to the value of x.

Independent variable: A variable (e.g., age) whose value is not affected by the values of other variables.

MODELS

Graphing Inequalities

$$x < 7$$

$$24 \leq x < 30$$